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THE
ONTARIO WATER RESOURCES
COMMISSION
WATER POLLUTION SURVEY
of the
VILLAGE 'OF ALFRED
UNITED COUNTIES OF PRESCOTT &
RUSSELL.

VILLAGE OF ALFRED (UNITED COUNTIES
OF PRESCOTT & RUSSELL) 1965

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September, 1965

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Report on a water pollution
survey of the village of Alfred.

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THE
ONTARIO WATER RESOURCES
COMMISSION

Report on a
WATER POLLUTION SURVEY
of the
VILLAGE OF ALFRED

Division of Sanitary Engineering

September 1965

Report on a
WATER POLLUTION SURVEY
of the
VILLAGE OF ALFRED

INTRODUCTION

On May 5 and 6, 1965, a water pollution survey was performed in the Village of Alfred to determine the sources and amount of surface water pollution occurring within the village.

Assistance was received from the following officials:

Mr. F. Larocque, Reeve, Village of Alfred;
Dr. R. G. Grenon, Medical Officer of Health and Director,
Prescott and Russell Health Unit;
Mr. R. Leblanc, Public Health Inspector,
Prescott and Russell Health Unit.

Appended are a map of the village showing the sample point locations, an interpretation of the laboratory analyses, and a tabulation of the sample results.

HISTORY OF POLLUTION

Due to complaints regarding the quality of the storm sewer discharges in the village, the Ontario Department of Highways and the local health unit made efforts to obtain information on the extent of illegal connections to the storm sewer on the Trans Canada Highway so that these could be severed. It was revealed that a fairly extensive amount of connections to storm sewers existed within the village. Since it appeared that corrective action could not be obtained on an individual basis,

it was felt that the municipality should proceed with plans to provide a municipal sewage works. Prior to definite recommendations being made to the municipality, this survey was made to determine the extent of water pollution.

THE VILLAGE OF ALFRED

General

Located centrally in the County of Prescott, the Village of Alfred lies on the Trans Canada Highway some 14 miles west of the Town of Hawkesbury. According to the 1965 Municipal Directory, the population of Alfred is approximately 993.

Water Supply

A municipal water works system was constructed in 1959 under agreement with the Ontario Water Resources Commission. The supply works consist of a pumphouse, a reservoir, and a series of tile collection areas. The tiles are of the perforated type and are laid in shallow formations in a ten-acre lot located near the southerly limit of the village. The tiles collect and transport water to a low lift pump well from whence it is delivered to a two-compartment storage tank located underneath the floor of the high lift pumping station. Chlorination treatment is provided.

Disposal of Sanitary Wastes

Private sewage disposal systems are utilized in Alfred. Septic tank systems and sub-surface cesspools are used mainly.

Many of these disposal systems are malfunctioning, resulting in sanitary wastes gaining access to the local ditches and sewers, either by direct connections or overflowing of septic tanks and cesspools. According to local officials, correction of these systems on an individual basis is practically impossible due to the nature of the soil combined with the insufficient size of the local lots.

Surface Water Drainage

Surface water flow is facilitated by the ditches and storm sewers. The storm sewer extending along the north side of Highway 17 generally collects the flows from the ditches and sewers serving the northern part of the village. The sewer, which discharges to a ditch at the foot of St. Paul Street, collects flows from the southern area, i.e., St. Placide Street, St. Mary's Street, and St. Paul's Street.

Visual evidence of sanitary wastes was noted in the various ditches within the municipality. Both storm sewer outlets discharge to ditches leading away from the municipality. These ditches undoubtedly flow to become part of the Ottawa or South Nation River Watersheds.

Garbage Disposal

The garbage disposal site is located approximately one-half mile south-west of the village. A landfill and burning method is utilized. Garbage is dumped over the side of a ravine

and subsequently burned. There was no flow in the ravine at the time of this inspection.

Industry

Being a rural community, the village has limited industrial activity. A dress factory employing about 25 persons is located on the south side of the main street. No liquid industrial wastes result from this activity. The Alfred Dairy discharges its industrial wastes, which include wash waters and milk spillages, to the local storm sewer.

SAMPLING PROCEDURES AND RESULTS

Samples were collected from the municipal sewer outfalls and from the small local watercourse. Visual observation, as well as the sample results, indicate the presence of sanitary wastes in both of the storm sewer discharges, i.e., the outfall to the ditch on the north side of Highway 17 at the east end of the village, and the outfall to the ditch at the foot of St. Paul's Street.

SUMMARY

A water pollution survey performed in the Village of Alfred revealed that pollution of ditches tributary to local watercourses was resulting from the discharge of contaminating wastes from the municipal storm sewers. Since it does not appear feasible to correct malfunctioning sewage disposal systems on a private basis, every effort should be made to realize the

establishment of a municipal sewage works system.

RECOMMENDATION

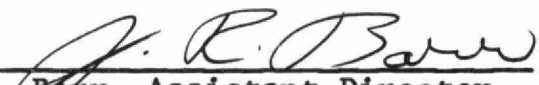
Serious consideration should be given to the establishment of a municipal sewage works system.

All of which is respectfully submitted,

District Engineer: _____


J. K. Theil

Approved by: _____


J. R. Barr, Assistant Director,
Division of Sanitary Engineering.

Prepared by: M. M. Holy

/mh

INTERPRETATION OF ANALYSES

The analyses employed in this investigation to assess the quality of the surface water are as follows:

Biochemical Oxygen Demand (BOD)

The BOD of sewage, polluted waters or industrial wastes is the oxygen required for stabilization (natural purification in a stream) of the decomposable organic matter or chemical material by aerobic biochemical action. Unless otherwise noted, a five-day BOD determination with incubation at 20°C is reported. A high BOD is indicative of organic or chemical pollution. A desirable upper limit in natural water commonly is four (4) parts per million.

Membrane Filter Coliform Count

The membrane filter technique is employed to obtain a direct enumeration of coliform organisms and is reported per 100 millilitres. The presence of coliforms indicates pollution from human or animal excrement, or from some non-faecal forms. A membrane filter coliform count in excess of the desirable upper limit of 2,400 organisms is considered to render the waters undesirable for bathing purposes.

Solids

The analyses for solids include tests for total, suspended, and dissolved solids. The first test measures both the solids in solution and in suspension. The results are reported in parts per million.

The suspended solids indicate the measure of undissolved solids of organic or inorganic nature in suspension. Land erosion, sewage, and industrial wastes are significant sources of suspended solids. The effect of suspended solids in water is reflected in difficulties associated with water purification and deposition in streams which could interfere with navigation and injure the habitat of fish. Where suspended solids values, ascertained by a quantitative analysis, approach 20 parts per million or less, laboratory difficulties usually result in these values being determined as turbidity, a qualitative analysis.

The dissolved solids are a measure of those solids in solution.

VILLAGE OF ALFRED

<u>Sample Point No.</u>	<u>Description</u> _	<u>Coliforms/100 ml.5-day Membrane Filter</u>	<u>BOD</u>	<u>S O L I D S</u>			<u>Date</u>
				<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>	
A 1-W	Storm sewer outfall to ditch on the north side of Hwy. 17- east end of Alfred	27,000,000	52	696	50	646	May 6/65
A 2-W	Storm sewer outfall to ditch at the foot of St. Paul Street	92,000,000	410	1578	278	1302	May 6/65
A 3	Small watercourse at Albert Street - west end of Alfred	400	0.4	344	1	343	May 5/65

NOTE: All results are in ppm except otherwise indicated.

